

Fingerprinting & Other Research Technologies Workshop (5/4/07)

YouTube - Audio & Video Fingerprinting David King / Franck Chastagnol

Overview
Use cases
Next steps

- Reference fingerprint database
- Populated with all partner videos as they have clear ownership
- Or directly by partners generating reference fingerprints music labels produce FP's and send to Audible Magic
- Policy database
- Metadata and policy associated with content (Rev Share, Track, Block)
- Matching Service
- For every new user video uploaded to site, YT extracts audio and video , E 0 0 0 0 0
- Fingerprint sent to match service for identification
- Result of identification is either:
- MSS o
- HIT with list of videos it matched against with confidence score



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- Fingerprinting - YouTube Integration (Cont'd)

- YT generates build list for Audible Magic based on license data - need to have a policy before we want a match
- Policy gets executed on uploaded video by "Claim" engine
- If Block: video taken down
- If Rev Share: video playbacks are tracked and monetized
- If Track: video playbacks are tracked, not monetized
- Rev Share engine and Reporting back to partners
- Weekly marketing report
- Monthly financial report

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- ◆ How well does it work
- Audio fingerprinting from 3rd party solution is very accurate (Audible Magic). No false positives, false negatives are unknown
- Video fingerprinting being developed by Jay/Michele very promising. Still training the algorithm. Too early to give data

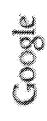
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2. Use cases

- YT launched audio fingerprinting in mid-Feb for all 200k daily \$ 0 0 0 0
- Reference fingerprint database populated with ~100k references, mostly songs from Music Labels
- Fast: fingerprint lookup and business logic executed within mines of mosq

S Rex Steps

- What needs improvement
- Policy DB (Rights management) is very complex
- International: different companies control rights in different countries
- Music industry: Labels, Publishers. Very difficult to build a global DB
- Identification: interesting cases
- Movie and TV clips with music, owner vs. distributor (MTV videos), mashups
- Building a large reference fingerprint DB requires huge outreach to partners, and ongoing cooperation
- Goals for 2007
- 100% YT uploads going thru Google based audio and video fingerprinting
- Build policy database for US content, extend to Int'l



G. Next Stabs

- Team is working on VERY aggressive timelines to build world class video and audio fingerprinting system for YouTube - we need to maintain focus to meet these deadlines - please help
- By end of Q3 timeframe, we should have more time to open the platform to other needs
- for YouTube. This is the linchpin for building relationships with The success and timely launch of this program is a top priority media companies, and monetizing video watch pages
- Media companies and press are all very interested in this work so confidentiality very important

